UNITED NATIONS

GENERAL ASSEMBLY

Distr.
GENERAL

A/AC.105/592/Add.2*
27 January 1995

ORIGINAL: ENGLISH/ARABIC

COMMITTEE ON THE PEACEFUL
USES OF OUTER SPACE

IMPLEMENTATION OF THE RECOMMENDATIONS OF THE SECOND UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE

International cooperation in the peaceful uses of outer space: activities of Member States

Note by the Secretariat

Addendum

CONTENTS

	Page
INTRODUCTION	2
REPLIES RECEIVED FROM MEMBER STATES	3
Egypt	3
Finland	6
Syrian Arab Republic	10

*This document has not been formally edited.

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INTRODUCTION

1. In accordance with a recommendation of the Committee on the Peaceful Uses of Outer Space at its thirty-seventh session, Member States have submitted information on the following topics:[1]

(a) Those space activities that were or could be the subject of greater international cooperation, with particular emphasis on the needs of the developing countries;

(b) Spin-off benefits of space activities.

2. The information on those topics submitted by Member States as of 30 November 1994 is contained in document A/AC.105/592.

3. The information on those topics submitted by Member States between 1 and 31 December 1994 is contained in document A/AC.105/592/Add.1.

4. The present document contains information on those topics submitted by Member States between 1 and 27 January 1995.

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[1] Official Records of the General Assembly, Forty-ninth Session, Supplement No. 20 (A/49/20), para. 29.

REPLIES RECEIVED FROM MEMBER STATES

EGYPT

[Original: Arabic, English]

I. National and international projects

The National Authority for Remote Sensing and Space Science has actively participated in the international and national plans through its projects and activities during the last year. Those activities and projects can be summarized as follows:

- Egyptian-Belgian pilot project entitled "The use of satellite imagery for soil salinity and waterlogging assessment in Egypt". The project aims at producing maps of scale 1:50,000 for:

  - Soil salinity; and
  - Soil waterlogging.

  In addition, the project aims to achieve different input layers with the final layers in digital format to be integrated into geographic information systems (GIS). This pilot project will result in developing and implementing a computer model based on GIS, geared to the representation and mapping of the present status of salinity and waterlogging and predicting future risks in terms of space and time.

- Integration of satellite land surface assessment with social and economic parameters for global desertification monitoring in the arid Mediterranean zone. This project has been carried out by the National Authority for Remote Sensing and Space Sciences in collaboration with corresponding organizations in France and Tunisia.

- Environmental study of Mokattam plateau area, east of Cairo, Egypt, using satellite imagery, aerial photographs and field work for the production of detailed maps for the study area including the geology, geomorphology, drainage basins and networks, land use, environmental hazards and precautionary measures.

- Production of semi-detailed maps of the Sinai Peninsula, Egypt. Using satellite imagery, visual and digital interpretation, and field works. Different types of maps including geological, structural, drainage basins and networks, geomorphology and soils have been produced, as well as different reports. These products will help in producing the Space Atlas of Sinai Peninsula which will be the backbone for the development project in that area.

- Use of remote sensing technology in studying geologic structures and its relation to the Dahshur earthquake and to earthquake activities in Egypt as a whole.

II. Development and modernization of the work at the remote sensing centre

- Development of the GIS system of the satellite image analysis laboratory through the purchase of input-output units and improving the capacity of the PC system. The devices to be purchased are the following:

  - Ideal contex scanner

- Versatec electrostatic plotter (Ao)
- Altek digitizer (Ao)
- Roland pen plotter (Ao)
- External hard disk 670 MB.

- Modernization of the GIS system of the satellite image analysis laboratory through the purchase and installation of a workstation and modernization of software for the following two systems:
  - Arc/Info (GIS System)
  - ERDAS (GIS System).

  These systems comprise the following:
  - Workstation (Alpha 600)
  - 4 GB H.D.
  - Tape drive 8 mm
  - CD ROM
  - Real tape drive 6250/800 Bpi.

- Interlinking the equipment within an internal network with a view to a better organization of work at the satellite image analysis laboratory (VAX 8350 - Microvax - PC's - Workstation).

- Providing the different departments with personal computers in order to improve their work - including financial affairs, administrative affairs and secretarial.

- The automatic map-drawer BC2 has been developed into a BC3 by installing a new set of software in order to increase its efficiency and speed of performance for the surveying department.

- Earth surveying equipment at the surveying department has been purchased or modernized with a view to increasing efficiency and speed of performance (total stations).

- Satellite data and information have been transferred from magnetic tapes to optical disks (laser storing units) with a view to protecting data, reducing storing space and facilitating use with the computer.

III. Training

- A number of GIS System training courses have been organized for scientific and technical staff members of the Centre in order to promote the efficient use of the System and its different applications for remote sensing purposes. Moreover, these courses contributed to the training of technical staff in the use of the relevant equipment.

- Two engineers received intensive training - both theoretical and practical - to prepare them for work at the Satellite image analysis laboratory. The training covered all that relates to the operation of the computer. The objective of the course, which lasted for three months, was to increase the work capacity of the Satellite image analysis laboratory.

- Completion of the training of the new air pilots in order to meet the workload allotted to the aeroplane.

- Completion of the training of air pilots, navigators and photographers in aerial photogrammetry work at the Centre.

- Training the staff members of different departments, including administrative and financial staff, to work with PCs and their software with a view to improving work in their respective departments.

IV. Development and modernization of the centre's equipment for which external financing is required from international financing agencies

Since the Centre is addressing at present some major national projects involving applications of remote sensing technology in the service of Egypt's national plan, and in view of the need to update and modernize the Centre's basic equipment in order to improve the final product and to keep abreast of rapid scientific progress in this field, and because the cost of such equipment always exceeds the allocations of the Centre's budget—the following equipment has been requested through the Ministry of International Cooperation:

- Computer equipment for the direct production of colour films, together with components and spare parts.

- Magnifier to enlarge colour and black-and-white films.

- Board for the vertical fixation of large sheets of paper.

- Unit for drawing and cutting large-size sheets of paper.

V. Mobile earth station project

Among the Centre's future plans is the establishment of a mobile Earth station to receive messages from natural resources surveying satellites. Such an Earth station should be able to receive data from the American LANDSAT, the French SPOT, the Japanese MOS and the Indian IRS, as well as satellites JERS-1, NOAA and others. Data received by such a station would serve all reconstruction and economic development projects in such fields as: natural resources, surveying, environmental control and pollution monitoring, regional planning, coastal erosion problems, natural disaster forecasting and prediction of their scale, production of different kinds of surveying maps, such agricultural applications as: expanded land reform, land surveying and land allocation, location of fish concentrations and locust concentration, stock-taking of agricultural crops and calculation of areas covered by them, groundwater and other water resources, national security and military uses. This is in addition to the reception of real-time data for national security and military purposes as well as the prediction of the scale of a disaster at the moment of its occurrence.

FINLAND

[Original: English]

I. Introduction

Finnish space activity started in the early 1980's with bilateral cooperation with the former Soviet Union on instruments for the Phobos Martian probe. This activity was handled by the Finnish Meteorological Institute's Geophysics Department. As the 1980's progressed, bilateral programmes with the former USSR and Sweden increased, leading to the involvement of universities institutes and industry in all aspects of scientific space instrument design.

On the telecommunications side, the TELE-X satellite programme was an important part of Finnish space policy in the early-1980's, but the expertise gained in this programme in the manufacture of ground stations and Direct Broadcast Satellite (DBS) antennas has been superseded by later developments. Some of the Finnish industry involved in TELE-X has gone on to supply modems and test and check-out equipment to ESA, whilst others have consolidated their operations elsewhere.

In 1987 Finland became an Associate Member of ESA and the companies active in space began to diversify into the supply of hardware and software for spacecraft platforms and associated ground station equipment. In these early days it was a case of "spin-in" of technology from non-space fields to space. Now Finnish industry and institutes have a portfolio of technologies and expertise which are space qualified, along with new technologies which are being "spun-in" from sectors such as aviation composite materials.

Finland has recently concluded negotiations with ESA for full membership, which will commence on 1st January 1995. This will result in an increase in Finnish participation in ESA programmes, particularly the Technology Research Programme where Finnish industry and institutes have ideal expertise but are not currently permitted by ESA rules to bid.

I.1. International Cooperation

Finland is a member of, or participates in, the work of several international organisations. The list below shows this participation and the body in Finland responsible:

- COSPAR: Finnish COSPAR Committee
- ESA: Technology Development Centre (TEKES)
- EUMETSAT: Finnish Meteorological Institute
- EUTELSAT: Telecom Finland
- INTELSAT: Telecom Finland
- INMARSAT: Telecom Finland
- EARSeL: (European Association of Remote Sensing Laboratories) Helsinki University of Technology
- COSPAS/SARSAT: Border Guard of Finland

II. ESA programmes supported by Finland

Finland is active in the Technology, Science, Telecommunications and Earth Observation Programmes of ESA; details of the funding allocated to these activities are given in the next chapter. Finland currently does not finance microgravity, launchers or manned systems, although the possibilities open to Finnish industry in these areas will be carefully considered.

II.1. Technology

Finland supports the General Support Technology Programmes (GSTP) programme to a level of 3.2% in the following themes:

- Theme 1: Earth Space Telematics Network
- Theme 3: Global Earth Monitoring
- Theme 4: Deep Space and Observatory Facilities
- Theme 9A: Onboard Common and Generic Technologies
- Theme 9B: Ground Based Common & Generic Technologies

Finnish industry is free to participate in General Budget Investments and General Budget "Line 60" items, but the participation in the Technology Research Programmes will start in January 1995 after becoming a full member of the Agency. Finland does not participate in the In-Orbit Technology Demonstration Programme.

II.2. Science

Finland contributes to the science budget of ESA at the full GNP level of 1.73 % and has done so since joining ESA in 1987. Finnish industry participates in ESA financed activities at all levels, both for the payload module and service module (platform).

Finnish participation in scientific instruments are financed through national means because Finland is not a member of the Prodex programme. Currently Finland is active in the following ESA programmes:

- SOHO (Solar Heliospheric Observatory): electronic components; nationally funded
- Cluster (magnetospheric observations): Deployment Mechanisms; Plasma Probes; Spherical Sensors;
- Huygens (atmospheric probe to Titan): Radar Altimeter; Pressure Measurement Probe
- XMM (X-ray Multi-Mirror Mission): Bids for work on the spacecraft and associated ground support equipment currently being evaluated; no involvement with the payload.

II.3. Telecommunications

Finnish activities are concentrated solely on the ground segment, with the emphasis on mobile telecommunications. Particular areas of interest for Finland are in combined satellite/terrestrial mobile telephones; the use of DBS satellites for data transmission and mobile antennas for trucks mobile terminals

for satellite digital audio broadcasting reception; associated technology such as Monolithic Microwave Integrated Circuits, signal processing and radio frequency technology. The supported ESA programmes and the Finnish contributions to the overall programmes are:

- ASTP-4 (Advanced Systems and Technology Programme): 2.67 %
- ARTES-1 (Advanced Research in Telecommunications Systems): 1.71 %
- PSDE-3 (Payload and Satellite Development and Experimentation Programme): 2.46 %
- DRS (Data Relay Satellite): 0.4 %

Finland also plans to join ARTES 5 "Advanced Systems and Telecommunications Equipment", ARTES 6 "Personal Satellite Communications", ARTES 7 "Experiment and Service Demonstrations" and ARTES 9 "Initial Global Navigation Satellite System".

II.4. Earth Observation

Some facts about Finland and the environment around and above it:

- The hole in the Arctic ozone layer which occurs in the winter can extend to the latitudes of Finland;
- In the winter much of Finland is covered by snow and the coastal waters are frozen;
- Finland has 264,000 square kilometres of forests and a large part of exports are of wood or wood products (e.g. paper);

Not surprisingly Earth observation is a high priority area in Finland. Industry and institutes have expertise in both the construction of instruments for Earth Observation (EO) and the subsequent processing and interpretation of data received.

Finnish institutes and industry are cooperating with Matra-Marconi (France) in the design and construction of the GOMOS Ozone monitoring instrument for Envisat-1. Finnish research institutes are expert in the processing and interpretation of synthetic aperture radar (SAR) and radiometric data for the mapping of sea-ice, snow cover, forests and land usage. Finland receives Meteosat and NOAA satellite data and is keen to see the continuity of this data into the next century via Meteosat Second Generation (MSG) and Metop (operational Meteosats).

Finland participates in the following ESA EO programmes:

- ERS Phase 2 (European Remote Sensing Satellite): 1.82 %
- EOPP Ext. (Earth Observation Preparation Programme): 1.62 %
- Envisat-1 (Environmental Satellite): 1.20 %
- Metop-1 P.P (Operational Meteosat Preparation Programme): 1.50 %
- MSG: 1.35 %

III. National and bilateral programmes supported by Finland

National and bilateral activities in the field of space science were the first areas in which Finland became an active space nation. Today these activities still account for over 50 per cent of space funding, albeit that nowadays an increasing proportion goes towards research into earth observation/remote sensing data and applications. A list of the largest of the national/bilateral projects is given below.

III.1. Spectrum Röntgen Gamma (SRG)

SRG is a large X-ray telescope due for launch in December 1995, being built by a joint programme between ten countries (Denmark, Finland, Germany, Hungary, Israel, Italy, Russia, Switzerland, the United Kingdom and the United States of America). Finland's contribution is a 19 pixel Silicon X-ray Array (SiXA) at the focal plane of the SO-DART telescope. The instruments will be used for spectral and timing studies of cosmic X-ray sources such as black holes and clusters of galaxies.

SiXA is being built by a consortium of Outokumpu Instruments, Princeton Gamma Tech (a United States subsidiary of Outokumpu), Technical Research Centre of Finland (VTT) and the University of Helsinki.

III.2. MARS '94

The Mars '94 programme was initially intended to use the October 1994 launch window for studying the planet Mars. The mission, recently postponed to the 1996 launch window, should use one "mother" spacecraft in Martian orbit with two small landers which are ejected onto the surface and two penetrators to pierce the Martian surface. The landers, known as Small Surface Stations, will conduct atmospheric and seismological measurements on the surface for one Martian year.

Finland is providing the Central Electronics Unit for surface stations, which contains the onboard data handling subsystems and power distribution subsystem. Finland is also responsible, along with France and Russia, for the Meteorological instrument subsystem.

The Helsinki University of Technology (HUT) participates in the low frequency (0.17-4.93 MHz range) radar measurements of the Martian subsurface layers, which will be made by the mother craft in orbit above the planet. HUT is making a simulation programme based on the operating principles of radar and the electromagnetic theory of wave propagation in different materials. The difference in dielectric properties of water and soil means that the low frequency radar may be able to detect the presence of water on Mars.

The Finnish organisation working on Mars '94 include the Finnish Meteorological Institute (FMI), Finnyards Electronics, Space Systems Finland and Vaisala. In addition to the small surface stations, FMI is also participating in a Plasma and Neutral Particle Instrument (Aspera-C), similar to that on the Swedish Freja satellite.

III.3. MARS '96

Mars '96 is intended to be a continuation of the Mars '94 mission, with another "mother" spacecraft transiting to Mars and then deploying (from orbit) a Martian rover vehicle and buoyancy balloon. This programme has the same participants as Mars '94.

On the payload side, Finnish involvement is once again in the provision of a Meteorological Sensors Package and also the provision of opto-electronics for a lidar to examine the contents of the Martian atmosphere. The opto-electronics work in Finland is being carried out by VTT Electronics, the University of Joensuu and Noptel in Oulu.

III.4. RADIOASTRON

This is the Russian lead satellite programme for Very Long Baseline Interferometry (VLBI) radio astronomy, due for launch in May 1996. Finland is providing a 22 GHz VLBI receiver for the satellite. The work is the responsibility of the Helsinki University of Technology Radio Lab and Ylienen Electronics.

III.5. FREJA

Freja is a small Swedish scientific satellite launched in 1992 by a Chinese Long March rocket for research into the aurora and magnetosphere. The Finnish Meteorological Institute provided a Plasma Instrument and a Wave Instrument for the mission. Finnyards Electronics provided dc-dc low voltage power converters.

III.6. ODIN

Odin is a small (less than 250 kg launch mass), affordable (less than $40 million) satellite for research into astronomy (e.g. star formation) and aeronomy (e.g. ozone layer depletion). Odin will be built by a consortium of Swedish, Finnish and other international partners as a continuation to the successful Viking and Freja satellites and is due to be launched in November 1997, after a 34 month build programme starting December 1994. Finnish interest in Odin are represented by Ylinen electronics and the Helsinki University of Technology Radio Lab, who are both currently negotiating their respective roles within the programme.

FMI and the University of Helsinki are participating in the Odin science team.

III.7. POLAR

Polar is NASA's mission for magenetospheric research from an elliptical Polar orbit (apogee at approximately 60,000 km, perigee at approximately 13,000 km), due for launch in 1995.

The mission is similar to that of ESA's Cluster, but utilises only one spacecraft instead of four. Finland is already supplying instruments for Cluster and has been approached to supply similar hardware (e.g. Mechanisms for the Electric Field Instrument) for Polar. Finnish scientists will also be co-investigators for the scientific data produced by Polar.

III.8. CASSINI

Finland is supplying the Ion Beam Spectrometer for the Cassini orbiter of this joint ESA/NASA mission to Saturn's moon Titan (due for launch 1997).

SYRIAN ARAB REPUBLIC

[Original: Arabic]

I. Activities of the public agency for remote sensing during 1994

Since the beginning of 1994, the Public Agency for Remote Sensing (PARS), in conformity with its mandate, has been implementing its annual plan, comprising the following aspects:

- Training and preparation of specialized staff both inside and outside the Agency;

- Preparation of studies and application projects using remote sensing techniques;

- Cooperation with local, regional and international official agencies concerned with remote sensing;

- Promotion of remote sensing concepts and explanation of the importance of remote sensing.

- The following is a description of the most important activities of PARS during the year:

I.1. Training and technology transfer

The Agency continued its activities in the field of training and the transfer of modern remote sensing and associated technologies, as follows:

- Organization of a training course on the principles and applications of remote sensing, attended by technical staff from PARS and relevant local institutions;

- Organization of various lectures given by technical staff who had been sent out for training during 1994 or who had returned from long training missions after obtaining higher education certificates;

- Organization of an introductory course on geographic information systems (GIS), using the ARC/INFO program;

- Organization of a workshop on the practical applications of GIS and implementation of case-studies;

- Organization of a training course on the digital processing of space data, and implementation of case-studies on the preparation of space-based maps and land use;

- Organization of a lecture, in cooperation with the British Remote Sensing Centre, on the hydrological applications of remote sensing;

- Reception of a number of delegations of trade unions, students and organizations and organization of a visit by these delegations to PARS laboratories to be acquainted with new developments in the field of remote sensing;

- Signature of cooperation agreements with the Arab Centre for the Studies of Arid Areas and Dry Lands (ACSAD), the Ministry of Agriculture and the Ministry of Irrigation, on the use of remote sensing applications in projects implemented by these institutions;

- Organization of the Fifth International Seminar on Remote Sensing and GIS Applications in Water Resources Management. The seminar was attended by Arab and foreign specialists and technicians as well as representatives of all local institutions concerned. On the occasion of the seminar, an exhibition of maps and photographs and equipment used in remote sensing applications was held, with participation by various national and international companies.

I.2. Applied studies

PARS is implementing a number of applied studies and projects, either independently or in cooperation with concerned official agencies, such as the Ministries of Irrigation, the Environment and Agriculture and specialized units in universities or in cooperation with international institutions such as the International

Centre for Agricultural Research in the Dry Area (ICARDA), ACSAD and the Food and Agriculture Organization of the United Nations (FAO). Those studies and projects are as follows:

I.2.1. In the area of agriculture:

- Investigation of the spectral characteristics of soil. This project has the objective of using radiometers to measure the spectral reflection of the various types of soil common in the country in order to determine the spectral regime of each type of soil and compare those with satellite images so as to prepare a soil atlas.

- Soil erosion in the Syrian coast: This project is being implemented in cooperation with the specialized unit in the Faculty of Agriculture of Tashrin University. Its objective is to determine soil erosion areas and their susceptibility to water erosion and prepare virtual maps of those areas making use of aerial photographs and outer space data.

- Management of natural resources in Jebel Abdul-Aziz area: This project is being implemented in cooperation with ICARDA and the Ministry of Agriculture and Agrarian Reform. It has entered its second phase, which includes the verification of maps prepared through the interpretation of aerial and space photographs, choosing field test areas and then entering the set of maps prepared (geomorphological maps, soil maps and soil deterioration maps) into the geographical information system. The project will continue to 1995 in order to implement its third phase which will produce a map of proposed land uses and an action plan for the management of natural resources in the region.

- Investigation and control of desertification in Al-Bushra region: This project is being implemented in cooperation with ACSAD, the German Agency for Technical Cooperation (GTZ) and the Ministry of Agriculture and Agrarian Reform. Its objective is to monitor and control desertification processes in a pilot area of Jebel Al-Bushra region through remote sensing techniques and then generalize the findings to cover all areas subject to desertification in Syrian Bedouin areas.

- Tillila reservation in Tadmur (Palmyra) area: The preliminary study of this area has been implemented in cooperation with a specialized team from FAO and the Ministry of Agriculture and Agrarian Reform. It included the processing of space photographs in PARS laboratories and the interpretation of those photographs in order to prepare virtual maps of the distribution of vegetation in the area.

I.2.2. In the area of the environment and regional planning:

- Pollution in the Syrian coast (Banias) region: The first phase of this study is being implemented in cooperation with Tashrin University. Its objective is to use remote sensing data to determine pollution areas and types along the region. It should be completed by the end of this year.

- Taxonomic environmental study of fish along the coast: The project is being implemented in cooperation with Tashrin University. Its objective is to conduct an environmental survey of fish, using remote sensing techniques. PARS is trying to enlist the cooperation of the Arab Organization for Agricultural Development and the Ministry of Agriculture and Agrarian Reform in completing this project. In that connection, a meeting was held with the above-mentioned agencies to formulate a comprehensive project document for implementation next year.

- Comprehensive environmental planning for Damascus and its surrounding rural areas: The project is being implemented in cooperation with the Ministry of State for the Environment and other

national bodies. Its objective is to use remote sensing techniques to prepare a set of virtual maps of natural resources, public services and administrative districts and process these maps through the Geographical Information System in order to formulate a comprehensive plan for the preservation of the environment in Damascus Province and Damascus Rural Province.

- Organizational scheme for Qardaha town: The project includes the preparation of a set of maps by using remote sensing data in conjunction with cadastral and topographic plans and maps, processing these maps in the Geographical Information System Unit to produce the organizational scheme for the town and establish a database for use in planning public utilities and managing natural resources.

- Preparation of an organizational scheme for Damascus town and surroundings: This project is being implemented at the request of the Public Company for Technical Studies and Consultancy. PARS has prepared in its laboratories a set of space photographs for the project. A set of geological, hydrological and agricultural maps has been prepared, with annexed notes, for use in establishing the direction of future development of Damascus town and surroundings.

I.2.3. In the area of geology and hydrology:

- Hydrothermal study of western Serghaya region: The implemented phase of the project included the conduct of resistivity measurements in order to determine faults and cracks and the non-homogeneity of rock layers as well as the taking of electromagnetic measurements to determine the distribution of mineral deposits, in terms of location and depth, in order to study ferrous mineral deposits in jurassic rocks and determine their range and dimensions.

- Study of collapse and associated volcanic phenomena: Work in this project has continued since the beginning of this year by completing the analysis and interpretation work of space data on the northern part of the coastal mountain chain to pave the way for preparing tectonic maps. PARS, in cooperation with a specialized university unit, is also undertaking a geochemical study of the genesis of deep substrata and basaltic rocks associated with the major collapse, in order to determine the local and structural situation. By the end of this year, all maps and findings will be finalized.

- Paraseismic study for designing earthquake-resistant structures: This study is concerned with preparing a bibliography of seismic events in the Syrian Arab Republic, identifying the levels of seismic hazard and determining the behaviour of various structures with regard to earthquakes as well as conducting experimental tests of the behaviour of different types of foundation soils.

- Radiometric measurements of rocks: The project comprises the taking of spectrographic measurements of rocks common in the Syrian Arab Republic, by using field radiometric equipment similar to those carried on board satellites, in order to determine the spectral fingerprints of rocks so as to identify them on satellite images. These spectral measurements take place in the central and coastal regions.

- Identification of sweet water springs along the Syrian coast: PARS is implementing this project on behalf of the Directorate General of Irrigation of the Coastal Basin. It comprises the use of remote sensing images and data to prepare geological and tectonic maps, to identify water systems and underground layers and to determine places of flow of sweet water in the coastal area and sites of sweet water springs along the Syrian coast.

I.2.4. In the area of the detection of antiquities:

PARS, in cooperation and coordination with the Syrian Directorate General of Antiquities and Museums and the United Nations Educational, Scientific and Cultural Organization, is implementing this project which has the objective of applying remote sensing techniques to study visible and buried archaeological phenomena and antiquities through the analysis of digital data recorded by survey equipment carried on board satellites and the optical interpretation of space images, conducting exploratory tours in the field and preparing plans showing present archaeological sites and detected sites.

II. International activities

In the context of global activities and international cooperation, PARS undertook the following activities during the year:

- PARS followed up the efforts made towards convening the First Pan-Arab Conference on Remote Sensing and Space Research. To that end, it held a series of meetings in Tunisia with specialists and officials of the Arab League Educational, Scientific and Cultural Organization. An agreement was reached with the Director-General of the Organization to respond favourably to the Syrian Arab Republic's request to host the Conference in Damascus during the last quarter of next year.

- PARS participated in the meetings of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and made intensive contacts with officials of this Committee which organizes international cooperation in the field of remote sensing.

- PARS participated in the workshop organized by GTZ in cooperation with ACSAD on the utilization of remote sensing techniques to monitor and combat desertification in Syrian Bedouin areas.

- PARS continued its efforts to host the Regional Centre for Space Technology and Science for Western Asia. In this context, it received a United Nations mission composed of Dr. Adigun Ade Abiodun, space science applications expert of COPUOS, Dr. Saleem Mahmoud, scientific adviser to the Government of Pakistan and Dr. Omar El-Barzi, delegate of the United Nations Economic and Social Commission for Western Asia. It arranged meetings of the mission with representatives of ministries and national institutions concerned with remote sensing and space science, attended by the Resident Representatives of both the United Nations Development Programme and FAO. Several meetings were held later to arrange for the Syrian Arab Republic's hosting the Centre and demonstrate its ability to do so.

- PARS arranged and documented a memorandum of understanding with the Indian Ministry of Outer Space. The two sides agreed to continue their joint activities at their specified times and exchange invitations to and participate in seminars, conferences and workshops organized by each of them in areas of joint interest.

- PARS participated in the seminar held by COPUOS in Graz, Austria on the use of space technology in the promotion of economic, social and ecological security.

III. Conclusion

All PARS activities during 1994 were undertaken within its plan, in accordance with its charter. These activities will be continued in conformity with PARS annual plans, in cooperation and coordination with official bodies and agencies, in order to realize the benefits desired from remote sensing and associated modern techniques.